

MAGNET FLOAT TYPE LEVEL GAUGE

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Silent Technology KANEKO



Features

- High degree of safety
- Easy-to-read level indicator
- Suitable for a wide range of applications.
- Reduced maintenance costs
- Various functions can be provided upon request.

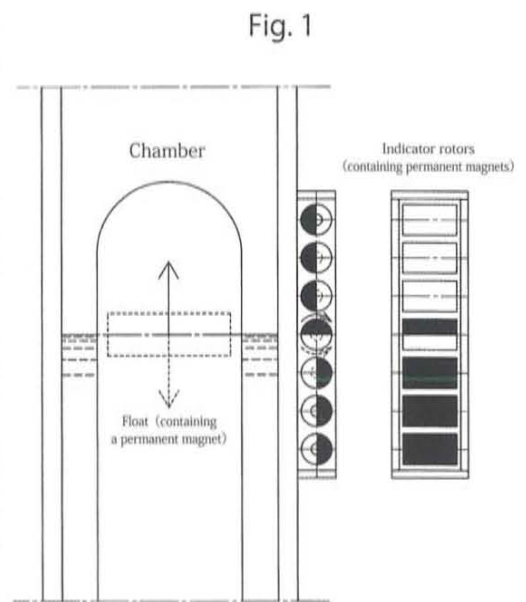
(Refer to Additional Structural Specifications at the back of this brochure.)

Description of Operation

This level gauge consists of a chamber float made of non-magnetic material and also an indicator. The indicator consists of a cluster of rotors containing permanent magnets which are mutually attracted to each other.

The float also contains a permanent magnet. When liquid enters the chamber from the bottom nozzle, the float rises along with the increasing level of the liquid in the chamber. As the float rises, the magnetic force generated inside it breaks the attraction between the rotors, causing the rotor nearest it to reverse direction. Here, the rotor and the next rotor repel each other, and also the rotor and the float attract each other, causing the next rotor to start rotating.

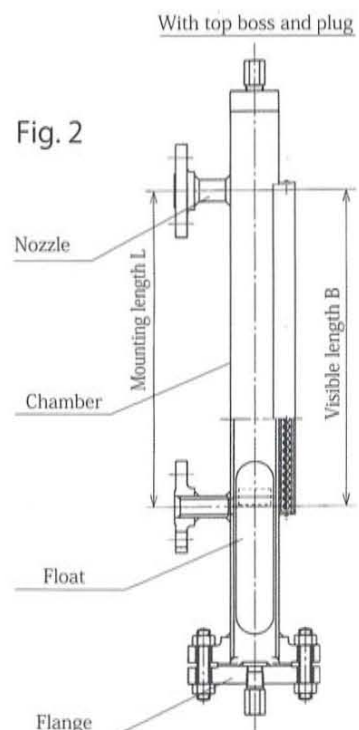
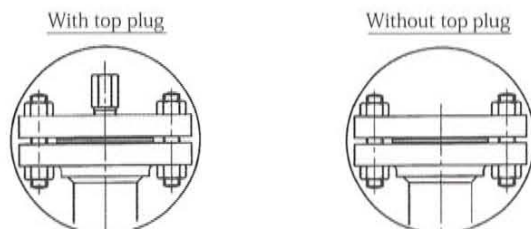
In this way, the level gauge operates continuously. The same principle also applies when the liquid level falls. Because the rotors are colored based on their magnetization directions, the level of the gas/liquid (or light liquid/heavy liquid in the case of an interfacial meter) is displayed on the indicator. The pitch of the rotors in the indicator is 10 mm. The displayed color is red for each 10 mm of the liquid layer (or heavy liquid), green for each 100 mm, and white for the air layer (or light liquid), and the position of the liquid surface is indicated clearly. (Refer to Fig. 1.)



General Body Structure

The body of the level gauge consists of a nozzle which connects the chamber (pipe) containing the float to a container (tank) for measuring the liquid level, and a flange for removing the float from the chamber (pipe). (Refer to Fig. 2.)

The chamber section is a pipe which is made of non-magnetic material. Generally, it is made of stainless steel, however the actual material used and the thickness of the material are selected according to the working pressure and temperature and also the properties of the liquid whose level is to be measured. The length of the chamber pipe is determined according to the visible range, the shape of the float to be used, and also the connection method, and the thickness of the pipe is determined based on the selected float size.



Specifications

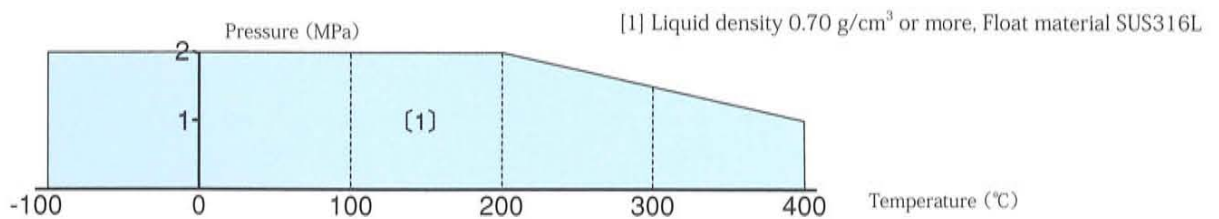
- Fluids Fluids that enable metal or plastic to be used
- Pressure 25.0 MPa max
- Temperature 430°C max
- Liquid density 0.35 – 2.0 g/cm³

★ For combinations of the above specification conditions, refer to the graphs below.

Standard Pressure – Temperature Range

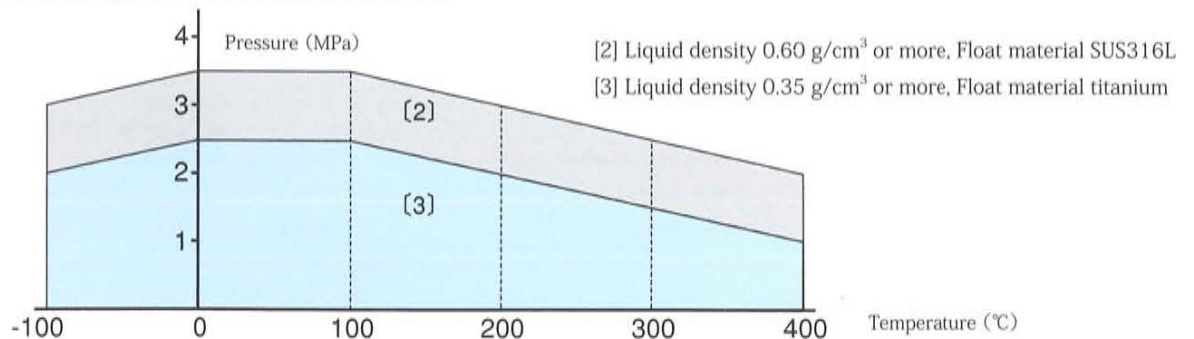
Please contact us for conditions other than the following specifications.

- When the chamber size is 25A

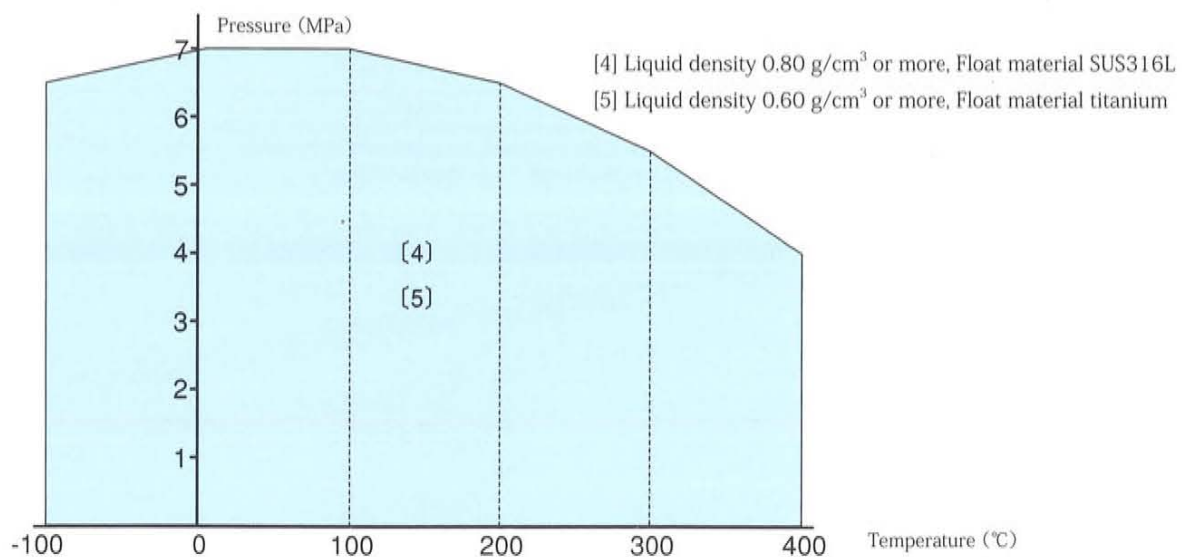


- When the chamber size is 50A

- When the ratings are 300 Lb and 20 K or less



- When the ratings are 600 Lb and 40 K or less



Magnet Float Type Level Gauge Model Number Selection Table

Ordering party/using party

No.	TAG NO.	Quantity	1	2	3	4	5	6	7	8	9	10	11	12	Fluid	Pressure (MPa)	Temperature (°C)	Liquid density (g/cm ³)	Remarks
1			LM																
2																			
3																			
4																			
5																			

Description of model number


1 2 3 4 5 6 7 / 8 9 - 10 - 11 - 12

LM A 25 A C J 1 2 / D 2 H / X - 2000 - 3 - X

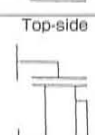
Model
LM: Magnet float type level gauge

Mounting profile

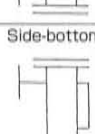
A Side-side



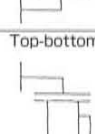
B Top-side



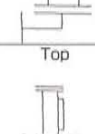
C Side-bottom



D Top-bottom



E Top



※1 Chamber size

25: 25A Less than (20k)
32: 32A Less than (63k 600Lb)
50: 50A Less than (63k 600Lb)
65: 65A Less than (1500Lb)

Chamber material

A : SUS304
B : SUS316
C : SUS316L
D : TITANIUM
E : PP
F : PVC
G : Same as FRP
Z : OTHER

※2 Float material

C : SUS316L
D : TITANIUM
E : PP
F : PVC
G : Same as FRP
Z : OTHER

※1 Connecting standards

JO : 20A JIS10KRF
J1 : 20A JIS10KFF
J2 : 20A JIS20KRF
J3 : 20A JIS30KRF
J4 : 20A JIS40KRF
J5 : 20A JIS63KRF
JZ : Without above JIS FLANGE
A1 : 3/4" ANSI150RF
A2 : 3/4" ANSI300RF
A3 : 3/4" ANSI600RF
A4 : 3/4" ANSI900RF
A5 : 3/4" ANSI1500RF
AZ : Without above ANSI FLANGE
P1 : 3/4" JPI150RF
P2 : 3/4" JPI300RF
P3 : 3/4" JPI600RF
P4 : 3/4" JPI900RF
P5 : 3/4" JPI1500RF
PZ : Without above JPI FLANGE

Fluid temperature range

1 : -100~100°C
2 : 0~150°C
3 : 0~250°C
4 : 0~350°C
9 : OTHER

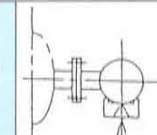
Additional structural specifications

X: None
A: Intermediate support
B: Drain flange
C: Top boss with Plug
D: Drain valve
E: Drain section short pipe cap
F: Non-frosting
G: Drain valve plug
J: Jacket
※3 H: Reed switch (flame-proof type)
L: Lining
※3 N: Reed switch (general type)
R: Magnetostriction type sensor
S: Scale plate
Y: Scale removal band

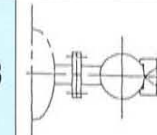
Mounting length (mm)

Visible direction (Seen from above.)

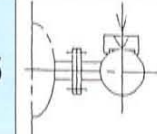
1



3



5



Accessories and special instructions

X: None
1: There are accessories.
2: There are special instructions.
3: There are accessories and special instructions.

Special instructions

- Please select the chamber size according to the specification conditions. For details, refer to the catalog. (*1)
- Do not make the connection bore larger than the chamber size. (*1)
- The standard float material for chamber sizes 25A and 50A is SUS316L. (*2)
- If the gauge has a reed switch, indicate the quantity as well in the model number. For example, if the gauge has two reed switches, the characters 2H or 2N are used. (*3)
- If there is something that is not indicated in the model number, indicate it in the above Remarks column.

In the case of a quotation (or order) , please inform us of the following conditions.

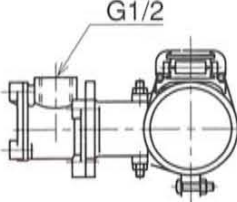
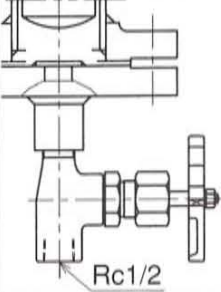
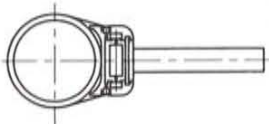
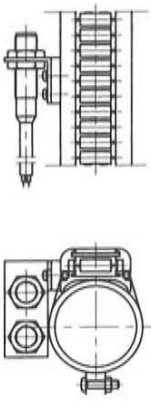
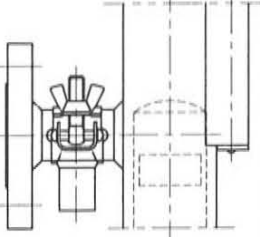
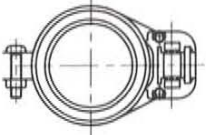
1. Name of fluid 2. Pressure 3. Temperature 4. Fluid density 5. Mounting length 6. Connecting standard 7. Quantity 8. Additional structural specifications 9. Others

Additional Structural Specifications

We can manufacture level gauges to match the following specification conditions.

- Jacket type: Reduces coagulation and boiling of the fluid.
- Antifreeze type: Prevents condensation on the visible surface.
- Lining type: Uses teflon-based resin to protect the inside surface of the body of the level gauge against highly corrosive fluids.
- Magnetostriction type: Enables output signals of 4 - 20 mADC or 0 - 10 V to be obtained.
- General type reed switch: Self-holding contacts Max working voltage: 120 VAC, 100 VDC
Max switching capacity: 10 W, Protective construction: Outdoor construction IP67
- Flame-proof type reed switch: Self-holding contacts Max working voltage: 125 VAC, 100 VDC
Max switching capacity: 10 W, Protective construction: Explosion-proof construction d2G4
- Scale plate: Indication of internal capacity, height, and so on, of tank
- Scale removal band: Removes magnetic contaminants in the fluid to prevent malfunctioning of the float.
- Intermediate support: Does not apply a weight load to the mounting nozzle.
- Drain valve: Can be installed as necessary.
- Drain flange: Connected to the drain section.
- Bent plug: Can be installed as necessary.
- Drain section short pipe cap: Can be installed as necessary.
- Drain valve plug: Can be installed as necessary.

Addition code (No.8)

Symbol	Option specifications	Symbol	Option specifications	Symbol	Option specifications
H	Flame-proof type reed switch 	D	Coupling + Drain valve 	F	Antifreeze type 
	N		General type reed switch 		S
Y		Scale removal band (Bottom nozzle alone installed) 		Concentric type (Applicable chamber size: 32A) Liquid density: 0.8 - 2.0 g/cm ³ 	



ISO9001 Approved, Certified Business for High-pressure Gas Test and Manufacture

Kaneko Sangyo Co., Ltd.

Home page: <http://www.kaneko.co.jp>

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